# Installing MacBook Pro 15" Retina Display Mid 2012 Trackpad

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## INTRODUCTION

This guide will help you replace the Trackpad.

### TOOLS:

- MacBook Pro and Air 5-Point Pentalobe Screwdriver (1)
- Plastic Opening Tools (1)
- Plastic Putty Knife (1)
- Spudger (1)
- T5 Torx Screwdriver (1)

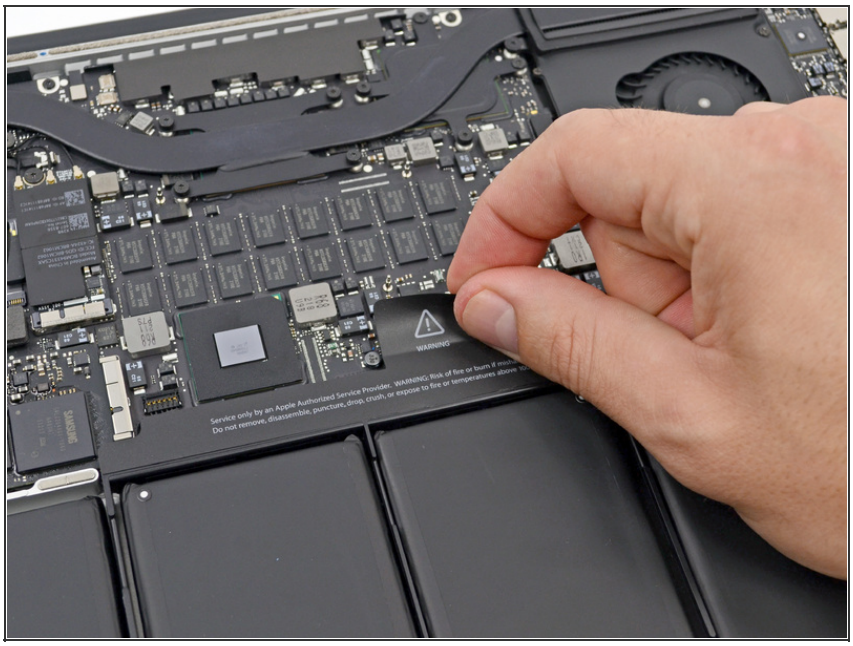
## Step 1 — Lower Case

- Remove the following pentalobe screws securing the lower case to the MacBook Pro with Retina display.
  - Eight 3.0 mm
  - Two 2.3 mm

## Step 2

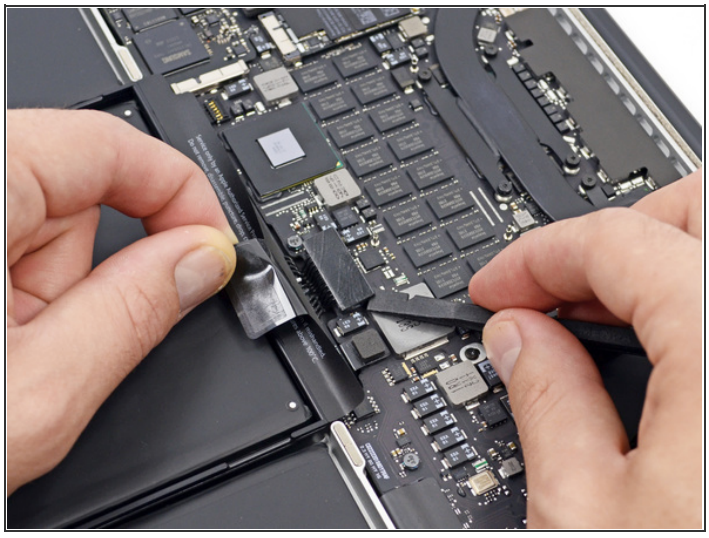
- Lifting from the edge nearest the clutch cover, lift the lower case off the MacBook Pro.
- Set the lower case aside.

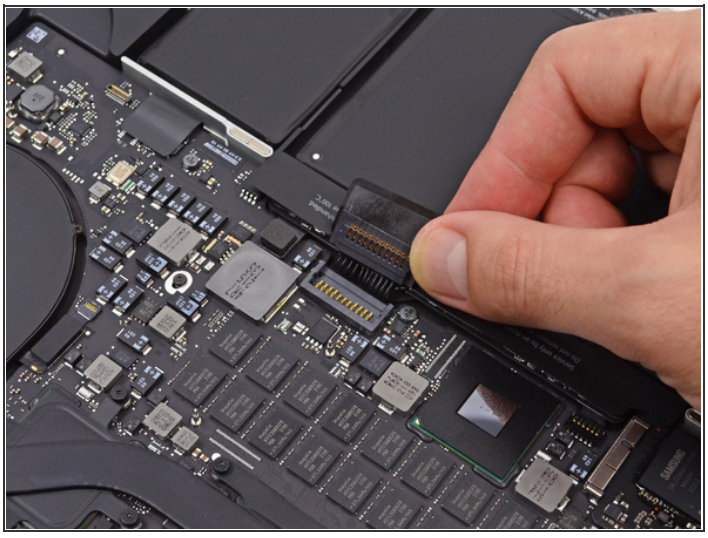
## Step 3 — Battery Connector



- Peel back the warning label covering the battery connector.

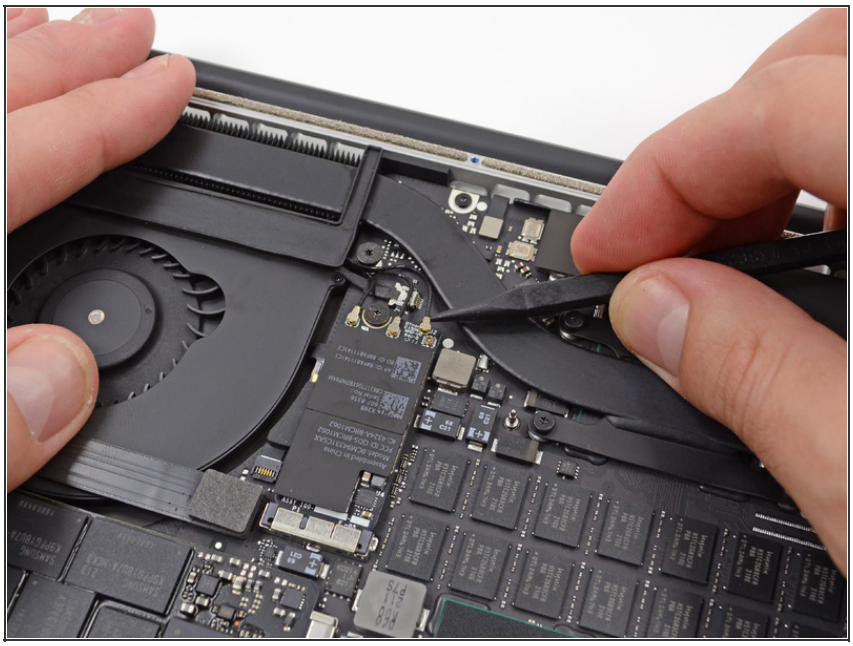
## Step 4





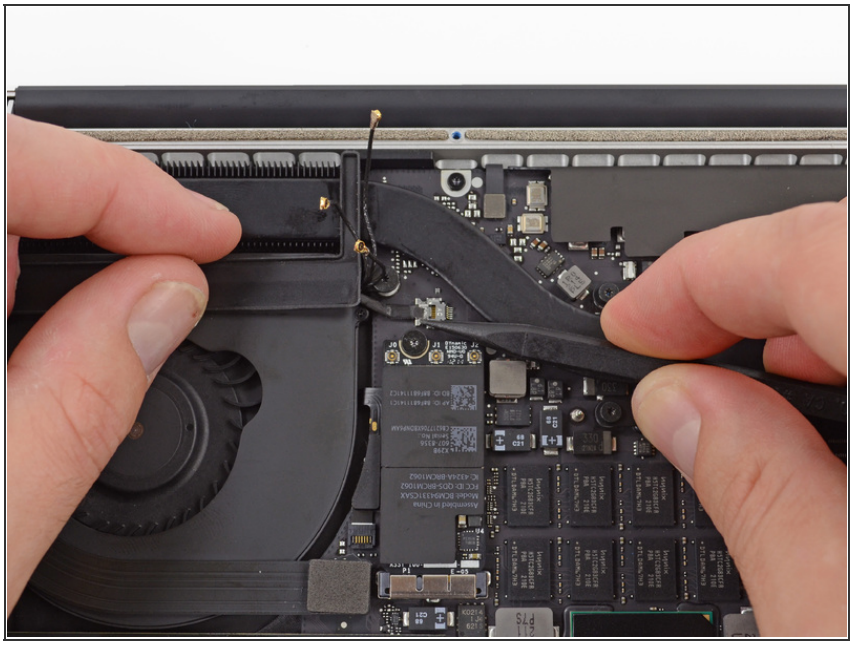
- Using the flat end of a spudger, gently pry the battery connector straight up out of its socket on the logic board.
- Bend the battery cables back and out of the way, ensuring that the battery connector doesn't accidentally make contact with the logic board.

## Step 5 — AirPort/Camera Cable



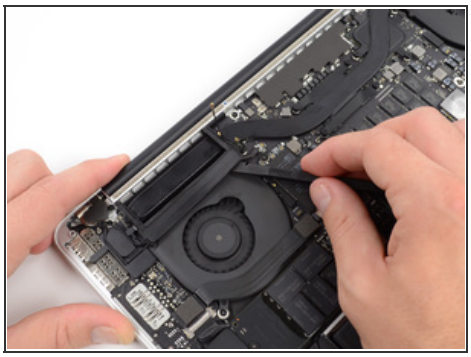
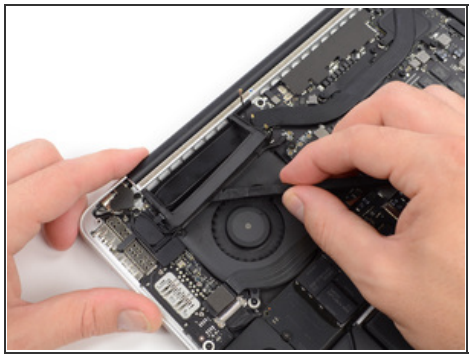
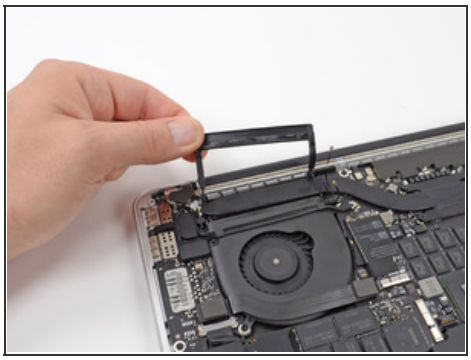
- Use the tip of a spudger to pry the three AirPort antenna cables straight up off of their sockets on the AirPort board.

## Step 6



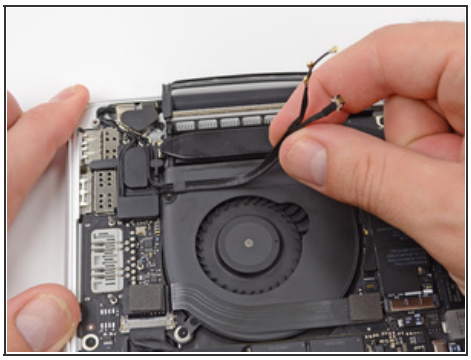
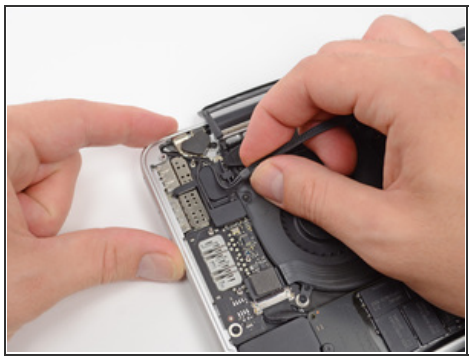
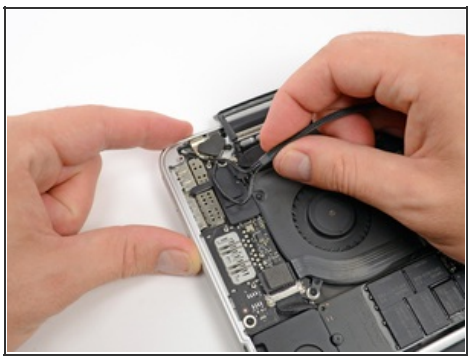
- Use the tip of a spudger to push the camera cable connector out of its socket on the logic board.
  - Be sure to push parallel to the board, pushing first on one side, then the other to "walk" the connector out of its socket.

## Step 7

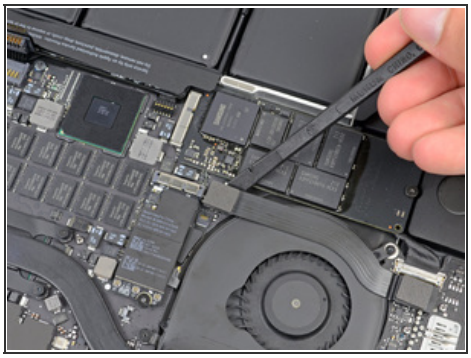
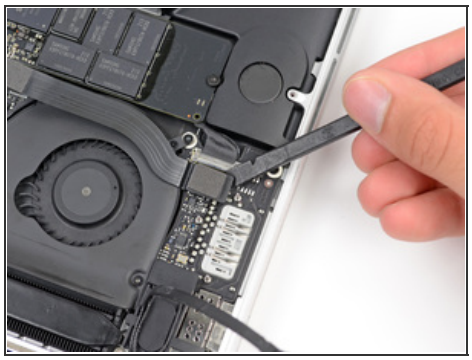
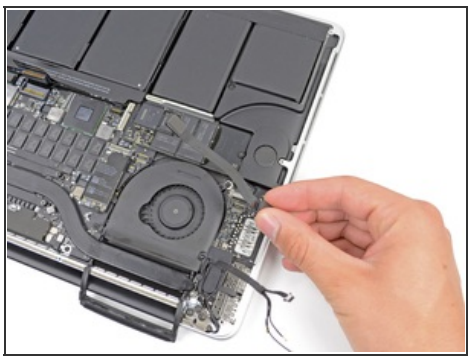
- Insert the flat end of a spudger underneath the rubber heat sink cover on the right fan.
- Slide the spudger underneath the length of the cover, releasing the adhesive.
- Lift the cover and flip it back so that you can access the cables underneath.

## Step 8

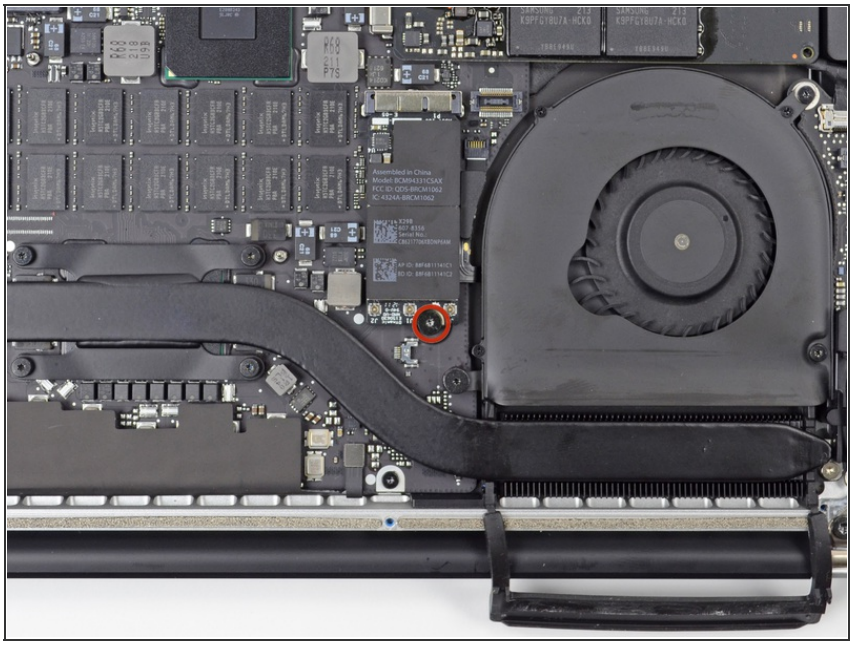
- Use your fingers to pull the AirPort/Camera cables up off the fan.
  - The cables are adhered to the fan, so peel them up carefully to prevent ripping any.
- Carefully de-route the cables from the plastic cable guide.

## Step 9 — I/O Board Cable

- Using the flat end of a spudger, pry the I/O Board connector straight up out of its socket on the logic board.
- In a similar fashion, remove the I/O Board connector from its socket on the I/O Board.
- Remove the I/O Board cable from the MacBook Pro.

## Step 10 — Right Fan

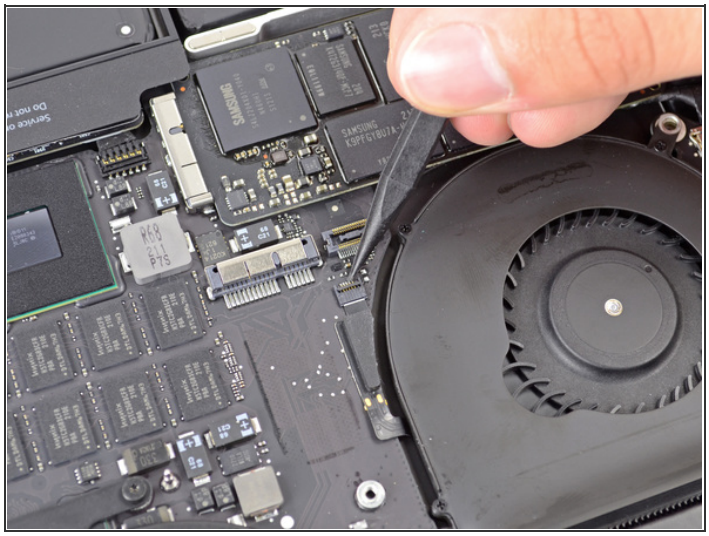


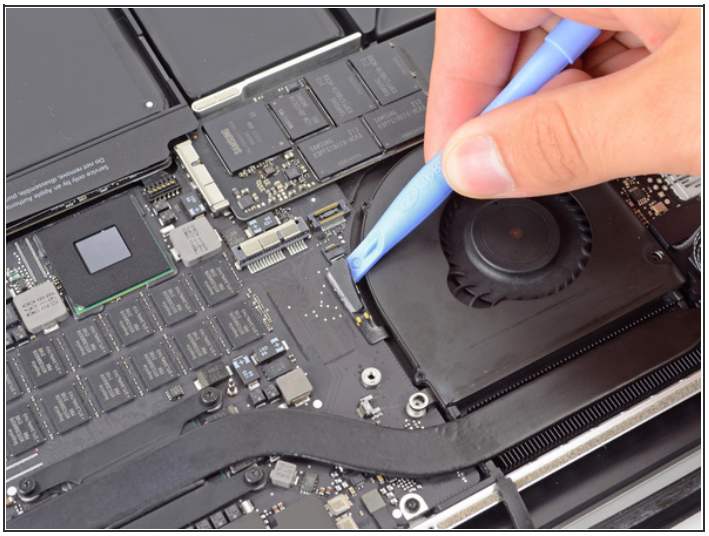
- Remove the single 2.9 mm T5 Torx screw securing the AirPort card to the logic board.

## Step 11

- Grasp the side of the AirPort card and pull parallel to the logic board, removing the AirPort card from the MacBook Pro.

## Step 12

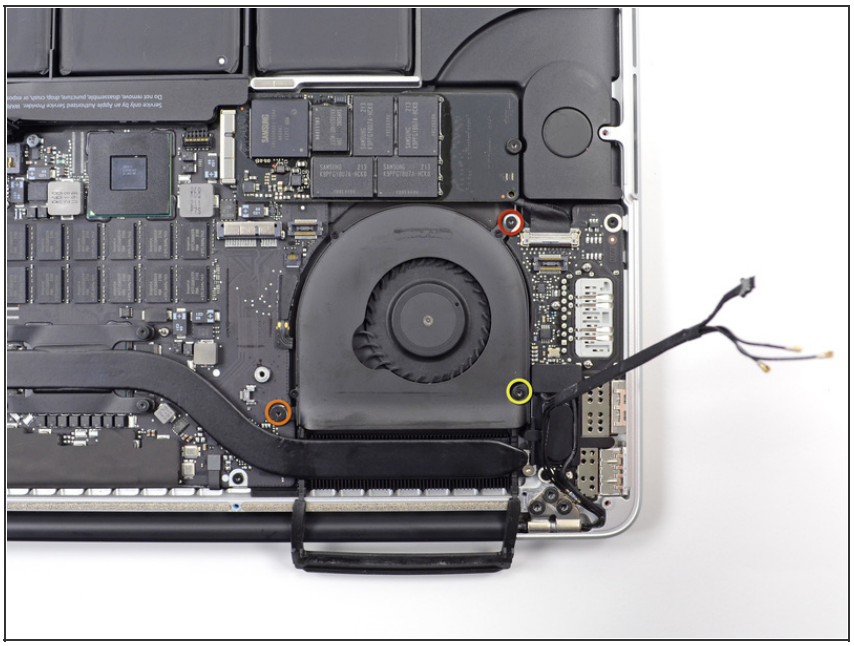




- Use the tip of a spudger to flip up the retaining flap on the right fan ribbon cable ZIF socket.
- Be sure you are prying up on the hinged retaining flap, **not** the socket itself.

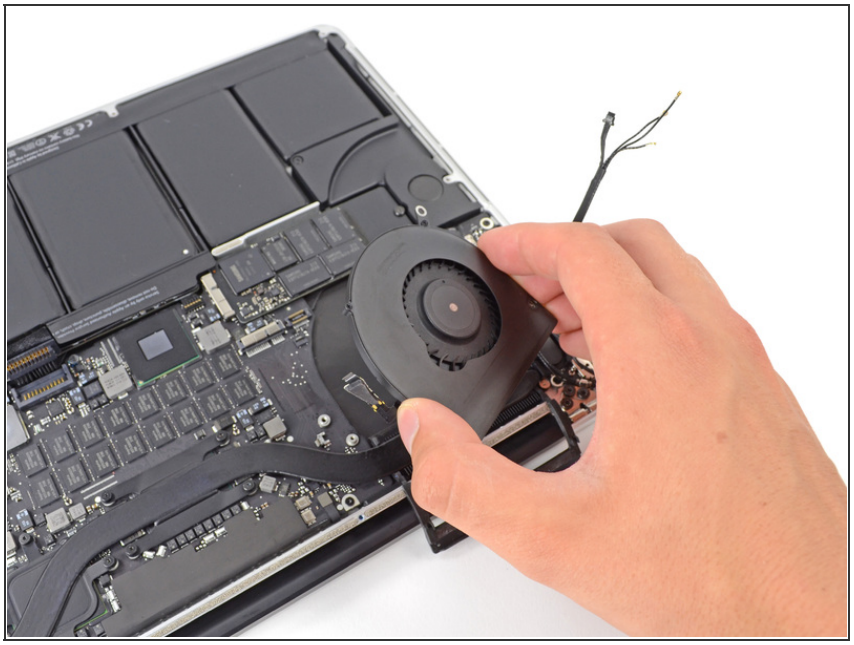
- Gently pry up the right fan ribbon cable from the logic board.

## Step 13



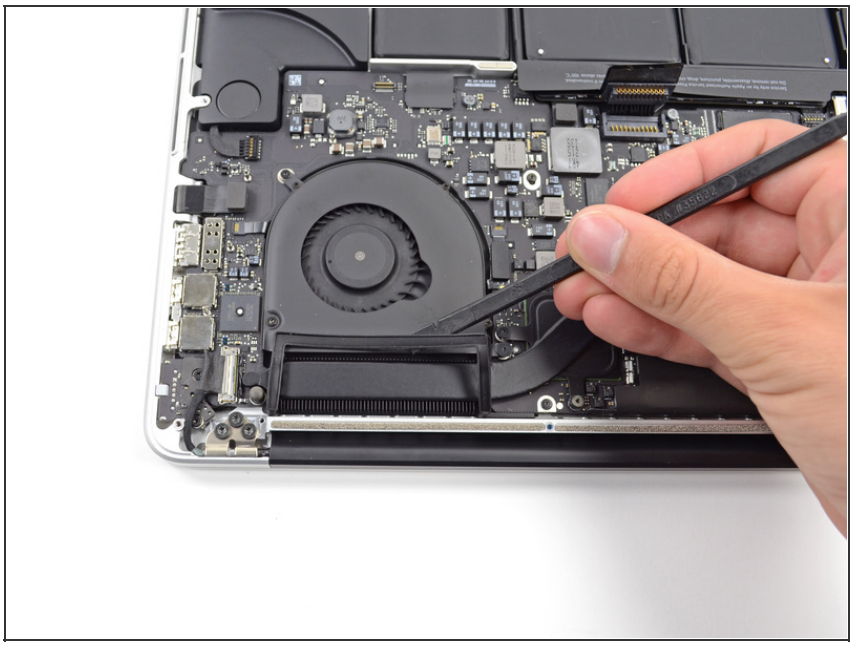
- Remove the following three screws securing the right fan to the logic board:
  - One 4.4 mm T5 Torx screw
  - One 3.9 mm T5 Wide Head Torx screw
  - One 5.0 mm T5 Torx screw

## Step 14



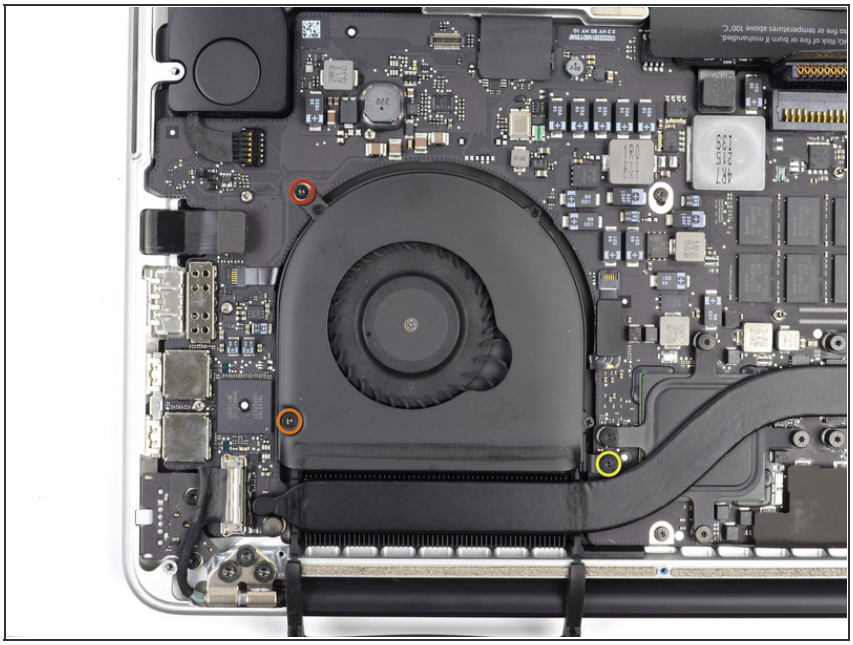
- Lift and remove the right fan out from the MacBook Pro.

## Step 15 — Left Fan



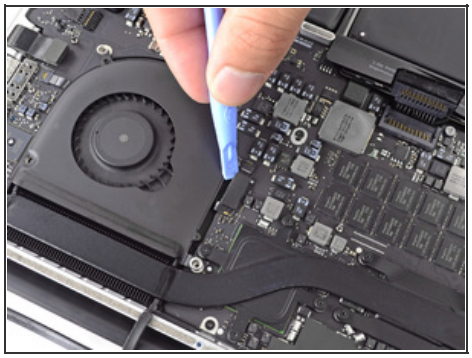
- Use the flat end of a spudger to lift the rubber heat sink cover up off the left fan.

## Step 16



- Remove the following three screws securing the left fan to the logic board:
  - One 4.4 mm T5 Torx screw
  - One 5.0 mm T5 Torx screw
  - One 3.9 mm T5 Wide Head Torx screw

## Step 17

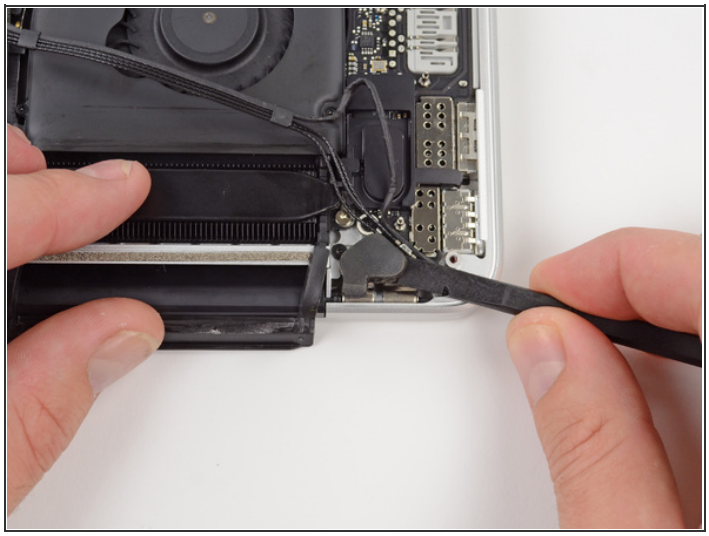
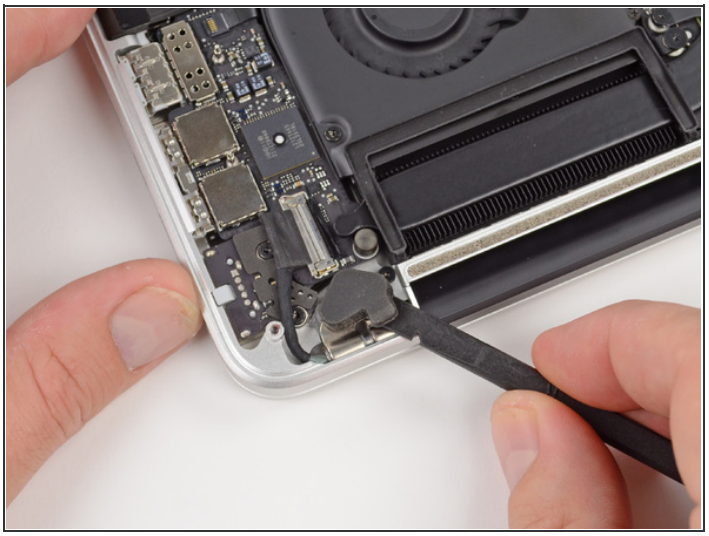


- Use the tip of a spudger to flip up the retaining flap on the left fan ribbon cable ZIF socket.
- Be sure you are prying up on the hinged retaining flap, **not** the socket itself.

- Starting at the top of the cable, slide a plastic opening tool under the left fan cable to free it from the logic board.
  - Use caution when freeing the cable, as it is strongly adhered to the logic board.

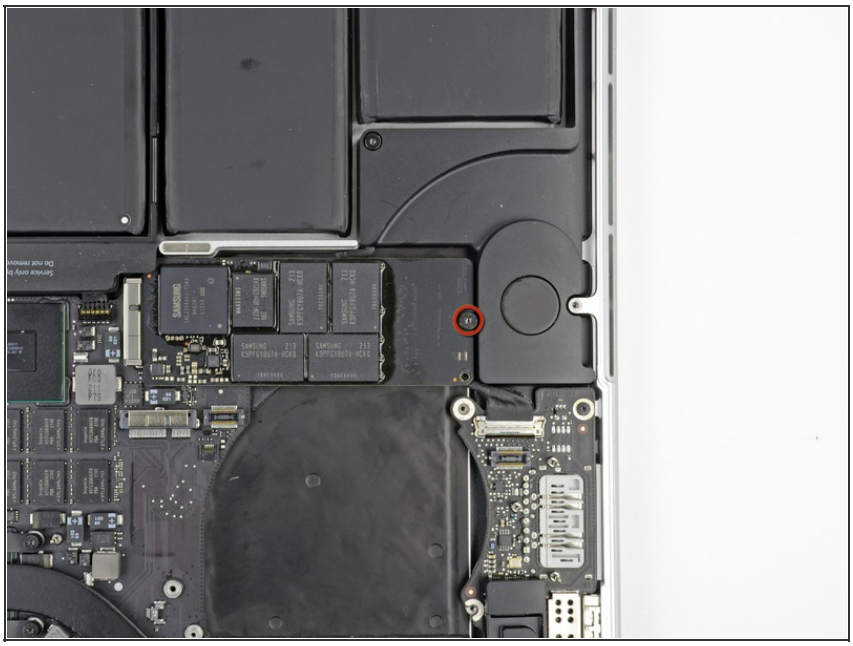
- Lift the left fan out of the device.

## Step 18 — Rubber Hinge Covers

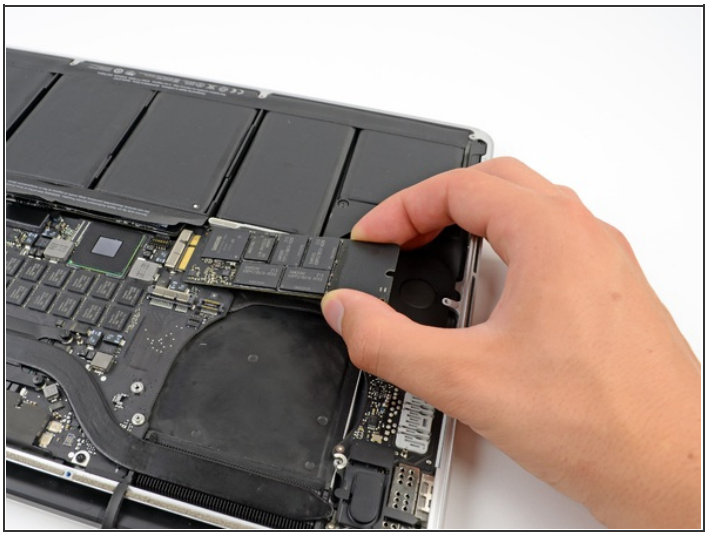
- Use the flat end of a spudger to pry the rubber hinge covers up off the left and right hinges.

## Step 19 — SSD



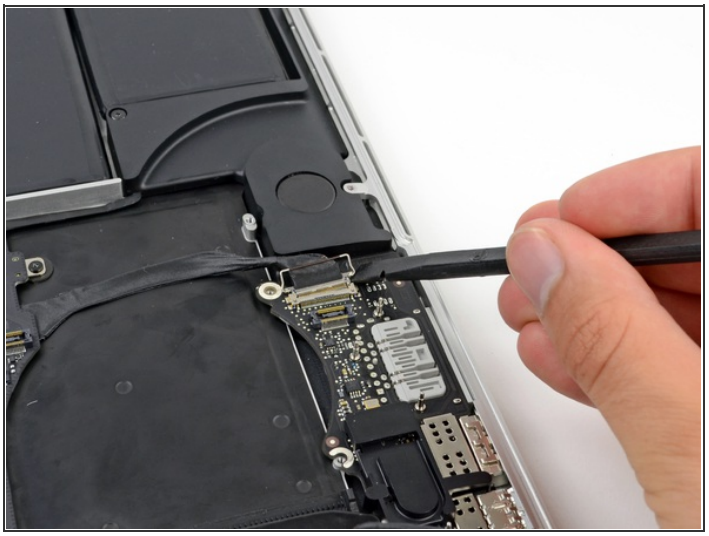
- Remove the single 3.1 mm T5 Torx screw securing the SSD to the logic board.

## Step 20



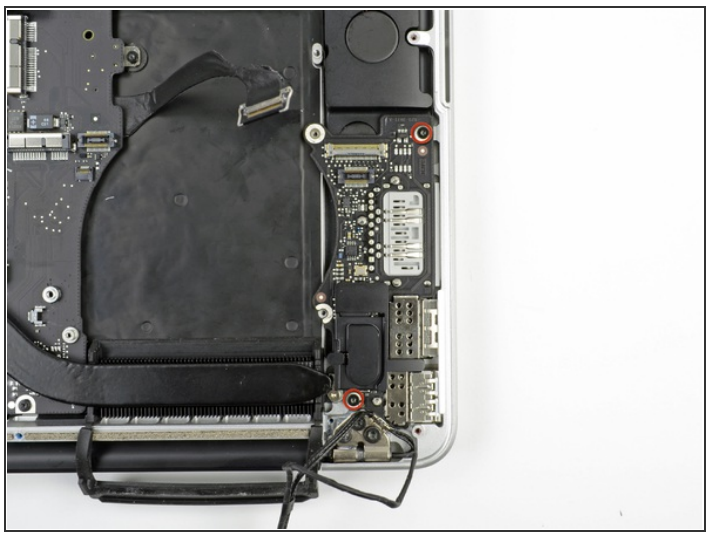
- Slightly lift the rightmost side of the SSD and firmly slide it straight away out of its socket on the logic board.

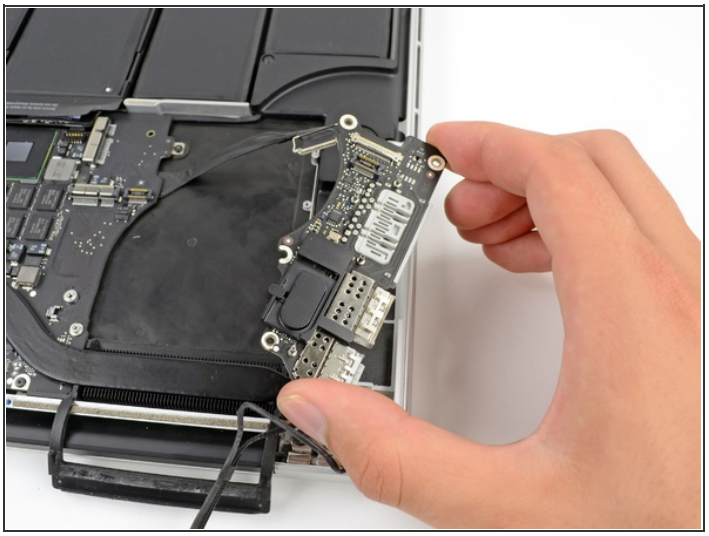
## Step 21 — I/O Board



- Use the tip of a spudger to flip up the I/O board data cable lock and rotate it toward the battery side of the computer.
- Use the flat end of a spudger to slide the I/O board data cable straight out of its socket on the logic board.
- Do not lift up on the I/O board data cable, as its socket is very fragile. Pull the cable perpendicular to the face of the logic board.

## Step 22



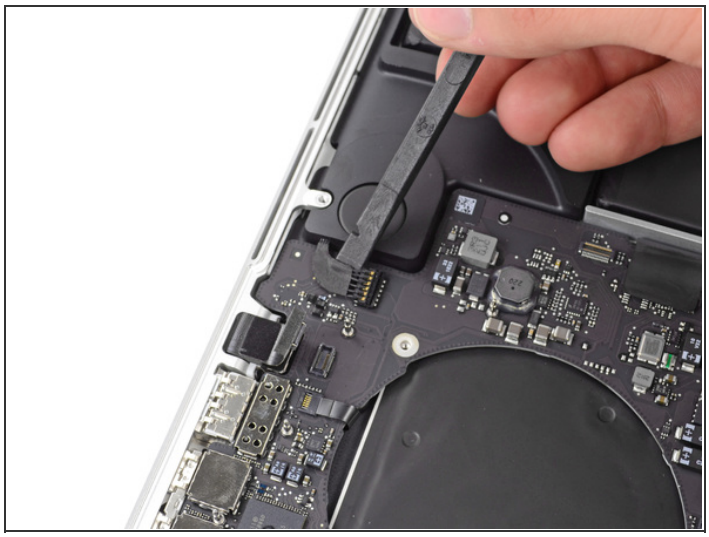


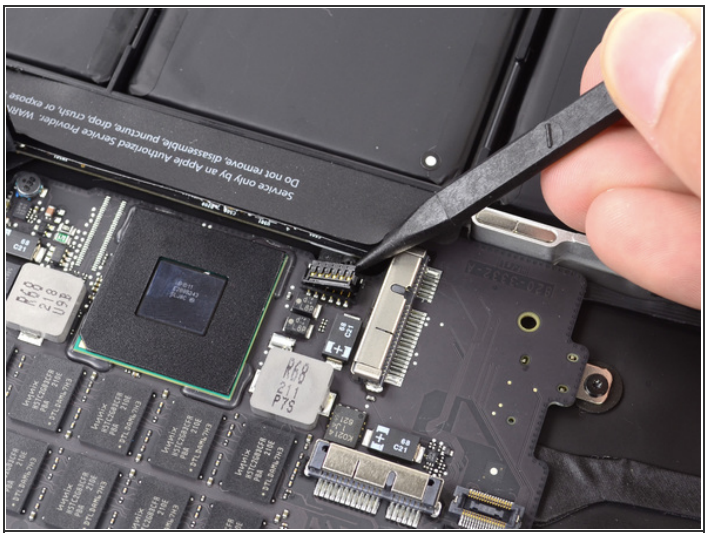
- Remove the two 3.1 mm T5 Torx screws securing the I/O board to the logic board.
- Carefully lift the I/O board and remove it from the lower case.

## Step 23 — Logic Board Assembly

- Use the flat end of a spudger to pry the headphone jack connector up from its socket on the logic board.

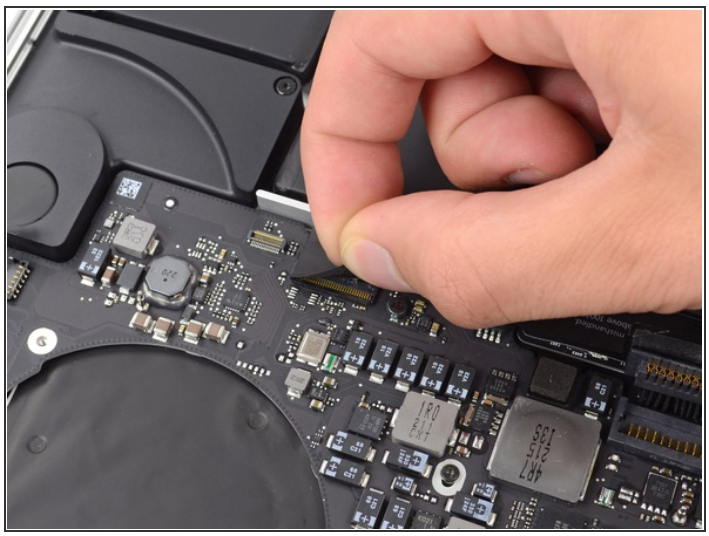
## Step 24





- Use the flat end of a spudger to pry the left speaker connector up and out of its socket on the logic board.
- Use the tip of a spudger to pry the right speaker connector up and out of its socket on the logic board
- Be sure to pry on the cable head, and not on the socket itself. Prying on the socket may cause it to separate from the logic board.

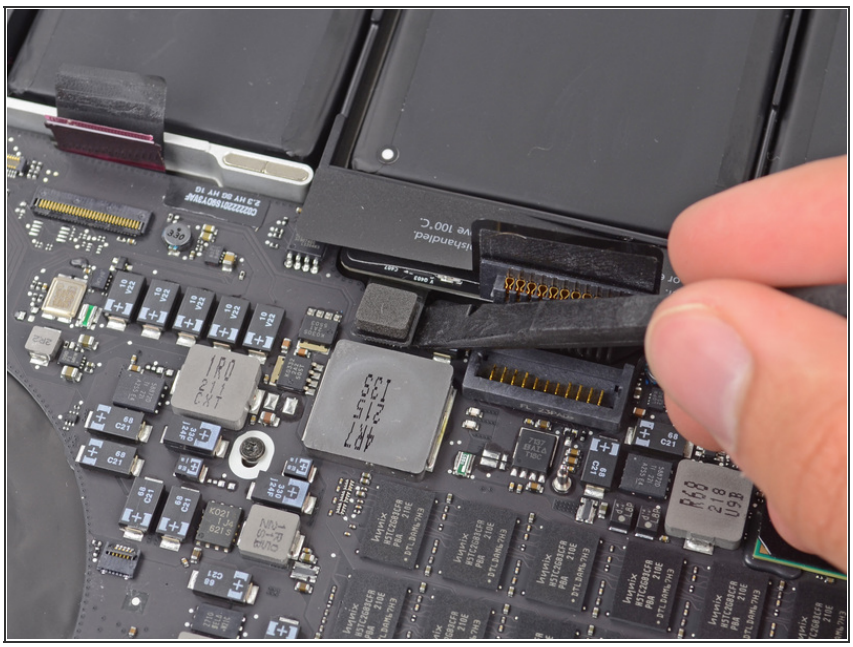
## Step 25



- Use the flat end of a spudger to flip up the retaining flap on the keyboard ribbon cable ZIF socket.
- Be sure you are prying up on the hinged retaining flap, **not** the socket itself.

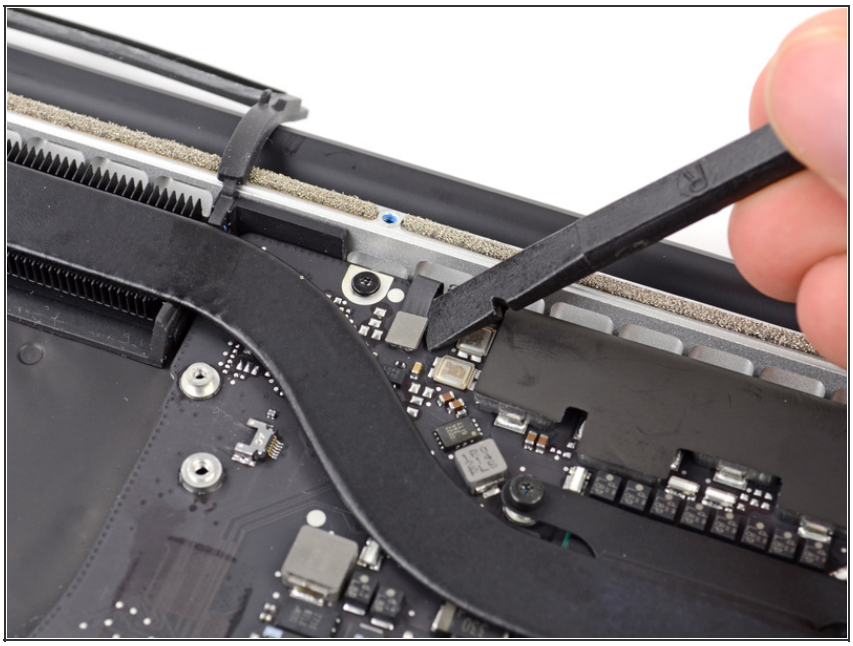
- Use the flat end of a spudger to pull the keyboard ribbon cable out of its socket.

## Step 26



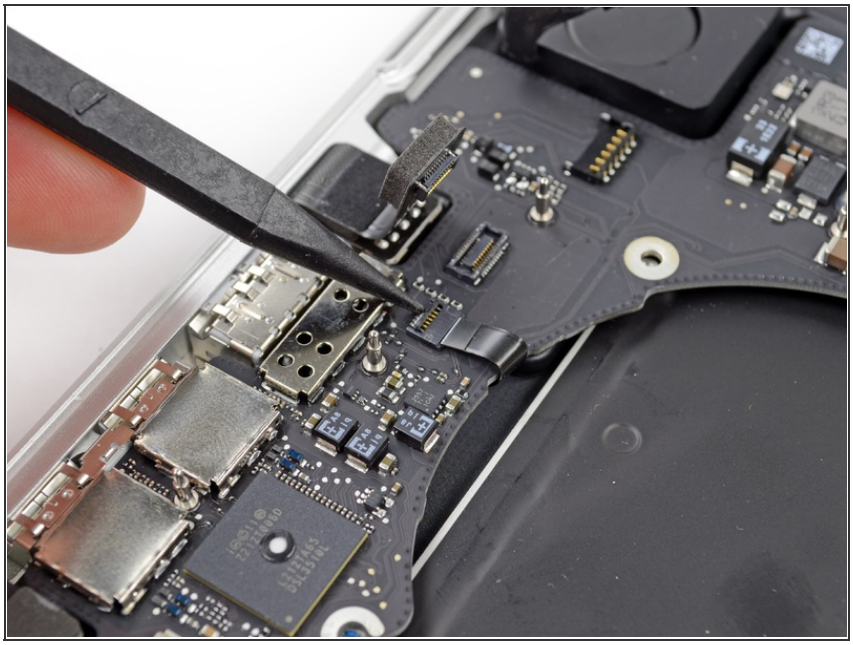
- Use the flat end of a spudger to pry the battery indicator connector up from its socket on the logic board.

## Step 27



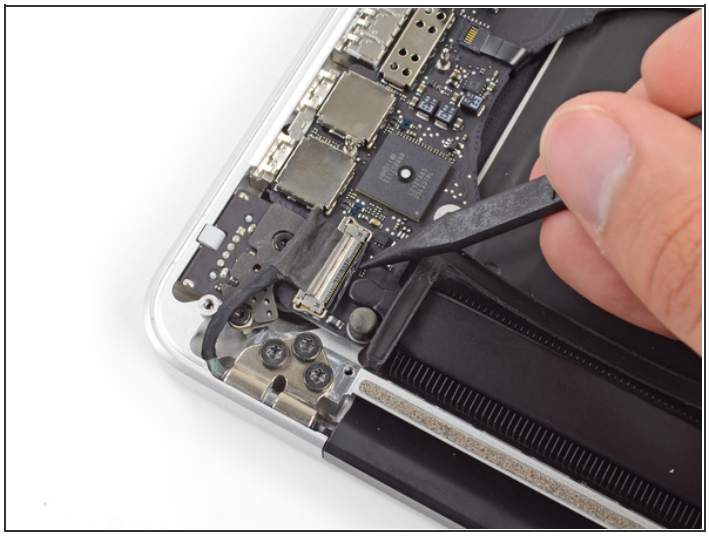
- Use the flat end of a spudger to pry the keyboard backlight connector up from its socket on the logic board.

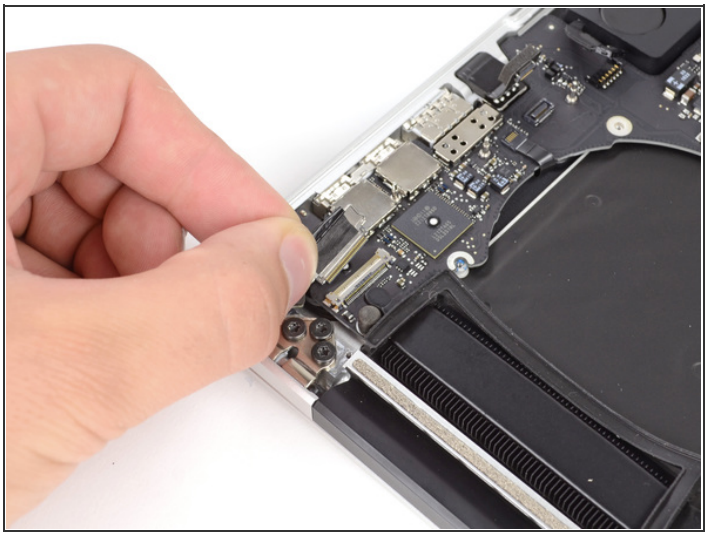
## Step 28



- Use the tip of a spudger or your fingernail to flip up the retaining flap on the microphone ribbon cable ZIF socket.
- Be sure you are prying up on the hinged retaining flap, **not** the socket itself.
- Pull the microphone ribbon cable out of its socket.

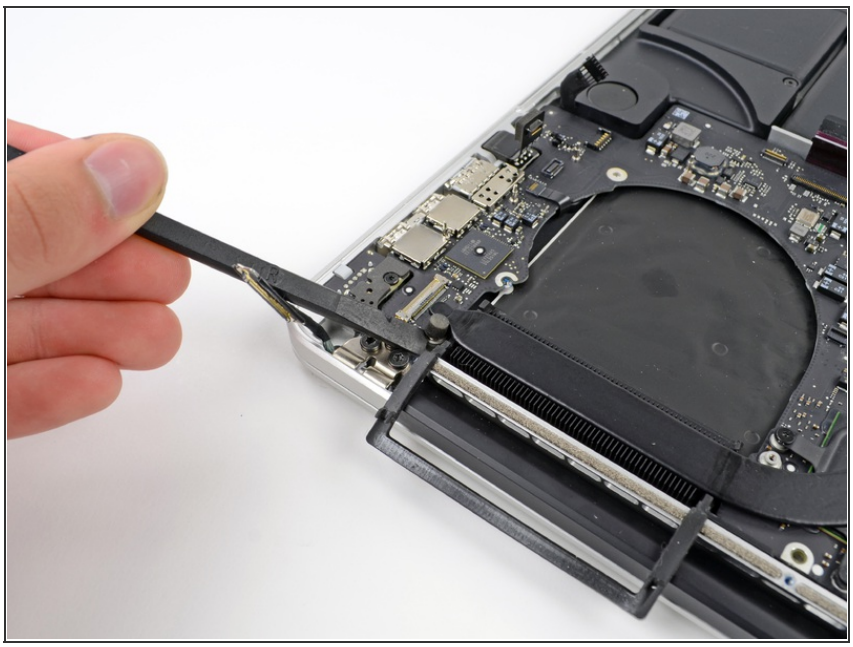
## Step 29





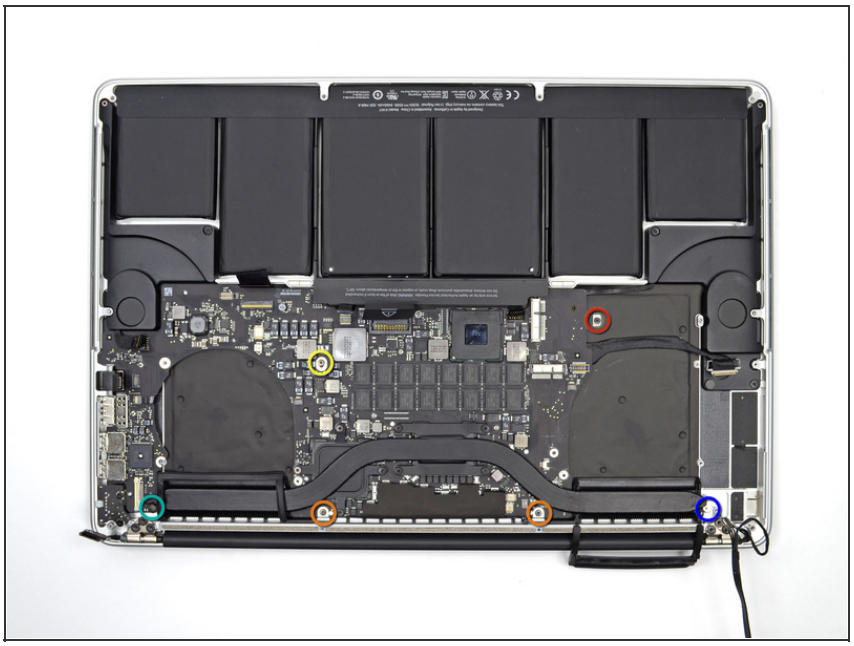
- Use the tip of a spudger to pry the display data cable lock and rotate it toward the DC-In side of the computer.
- Pull the display data cable straight out of its socket on the logic board.
- Do not lift up on the display data cable, as its socket is very fragile. Pull the cable parallel to the face of the logic board.

## Step 30



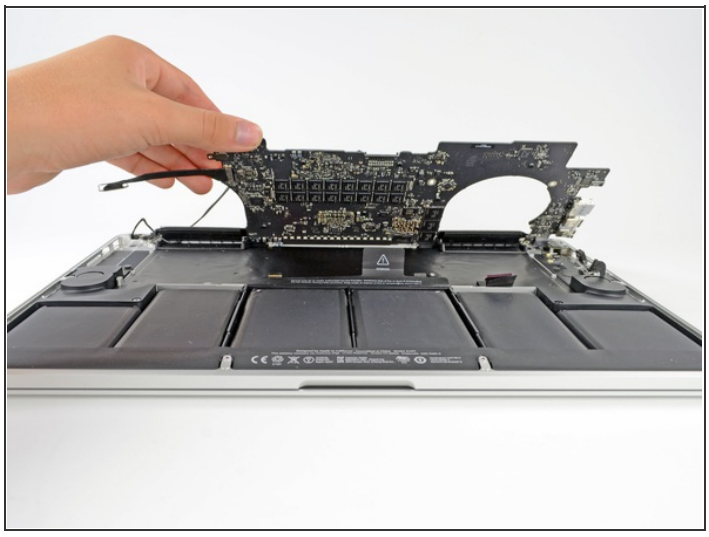
- Use the flat end of a spudger to carefully pry off the rubber screw cap on the raised screw head near to the MagSafe 2 connector.

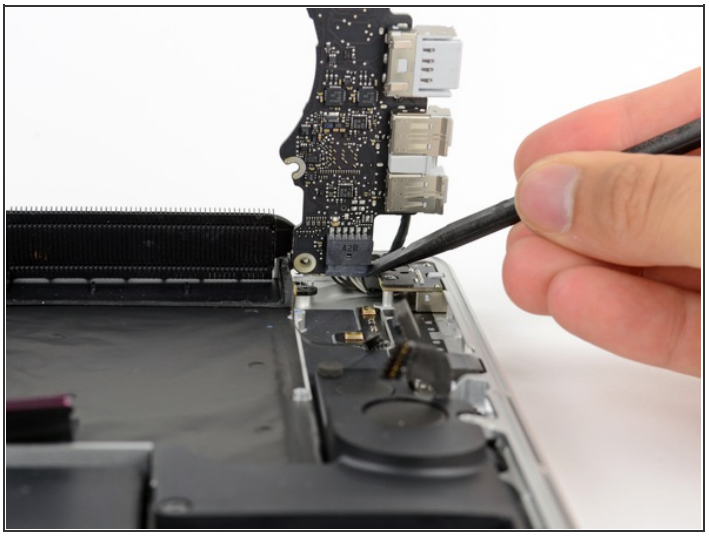
## Step 31



- Remove the following six screws securing the logic board to to the upper case:
  - One 2.6 mm T5 Torx screw
  - Two 5.8 mm T5 Torx screws
  - One 3.8 mm T5 Torx screw
  - One 5.2 mm Raised Head T5 Torx screw
  - One 3.5 mm T5 Torx screw

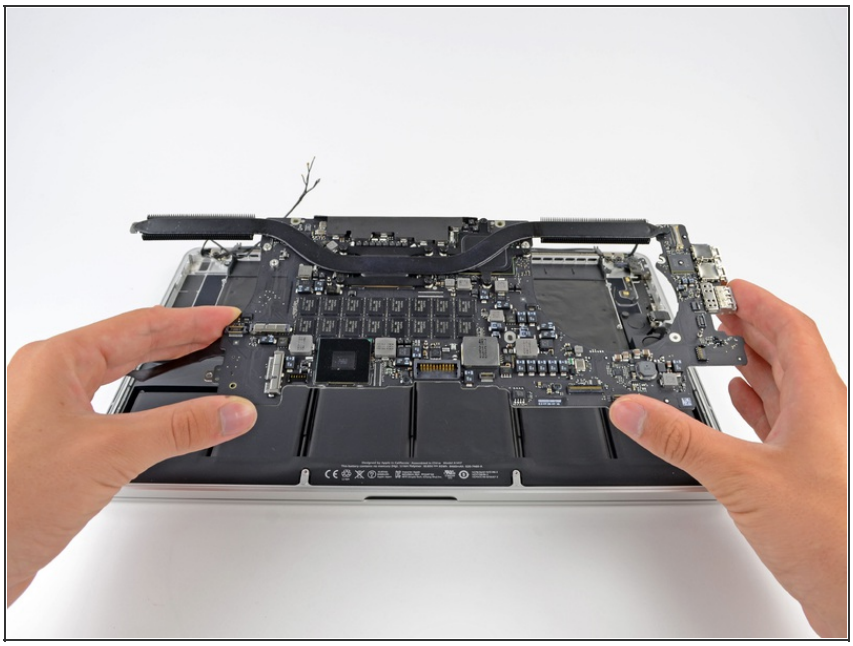
## Step 32





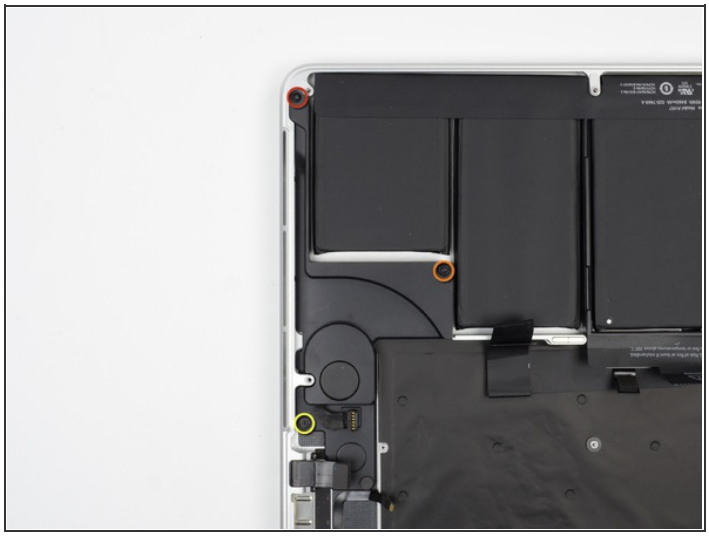
- Lifting from the side nearest the battery, rotate the logic board toward the top of the MacBook Pro.
- Using the flat end of a spudger, carefully push the MagSafe 2 connector out of its socket on the bottom of the logic board.

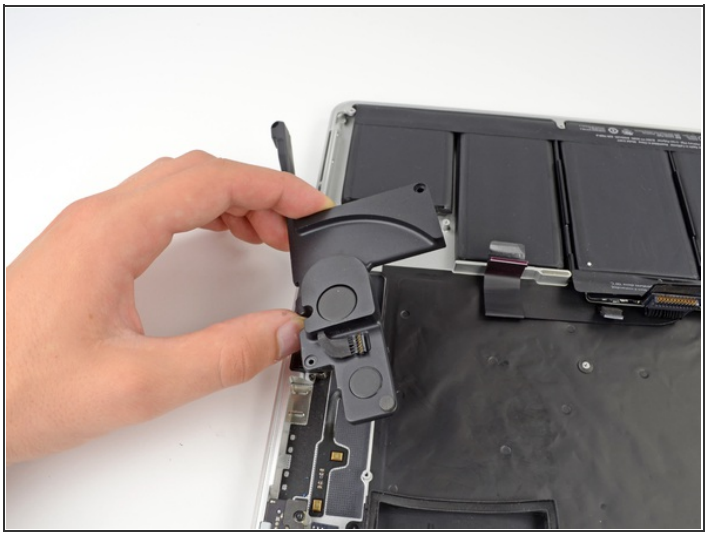
## Step 33



- Remove the logic board assembly from the MacBook Pro.

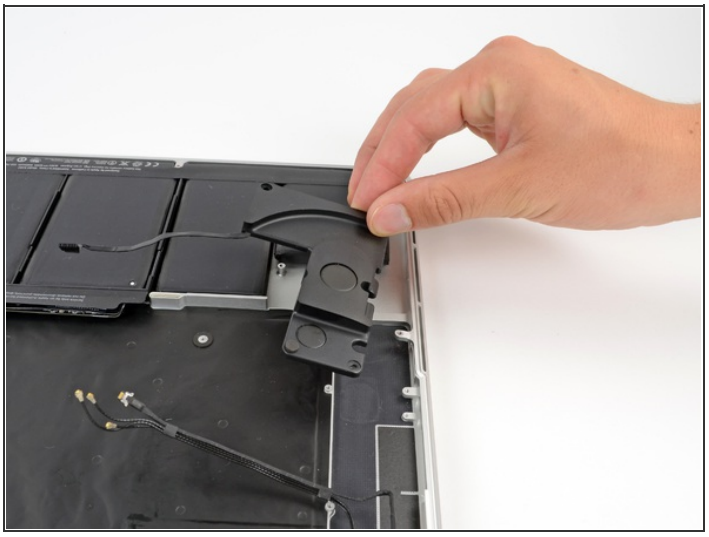
## Step 34 — Speakers





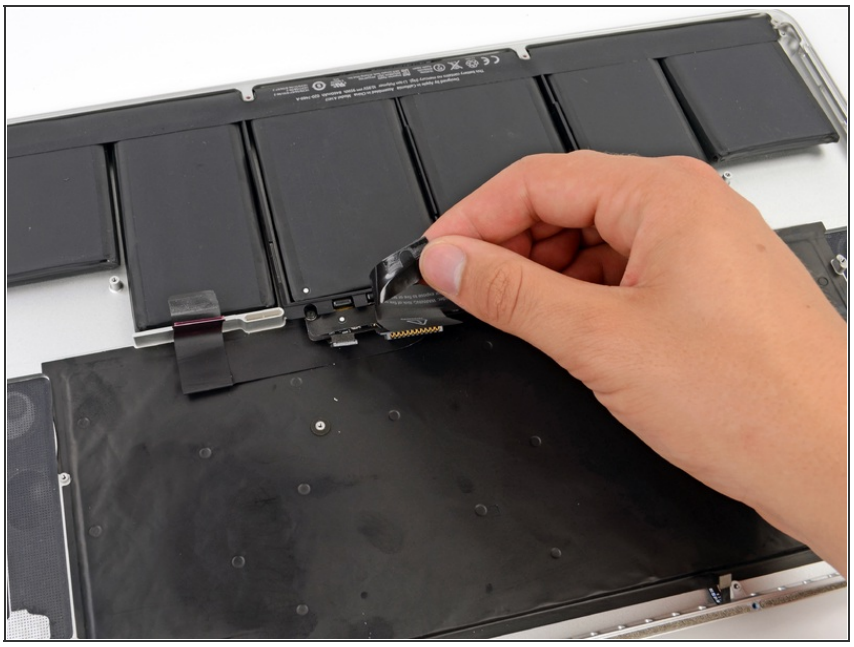
- Remove the following three screws securing the left speaker to the upper case:
  - One 5.6 mm T5 Torx screw
  - One 6.9 mm T5 Torx screw
  - One 2.6 mm T5 Torx screw
- Lift the left speaker out of the upper case and set it aside.

## Step 35



- Remove the following three screws securing the right speaker to the upper case:
  - One 5.6 mm T5 Torx screw
  - One 6.9 mm T5 Torx screw
  - One 2.6 mm T5 Torx screw
- Remove the right speaker from the MacBook Pro.

## Step 36 — Battery

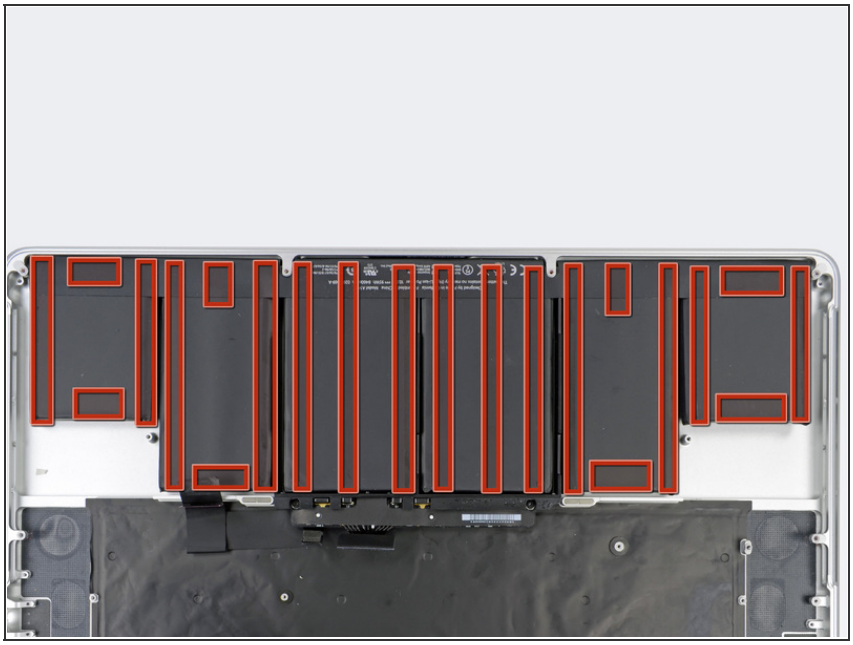


- Peel the battery warning label up off the battery.

## Step 37

- Remove the two 3.8 mm T5 Torx screws securing the battery frame to the upper case.

## Step 38



- In the following steps, you will be using a plastic putty knife and a spudger to release the adhesive holding the battery to the upper case.
- The adhesive is **very** strong, and will require a lot of strength and patience to remove.
- There is a risk of tearing the outer casing of the battery. Puncturing or tearing the battery can result in the release of potentially noxious fumes and fire. Work in a well ventilated area, away from potential hazards.

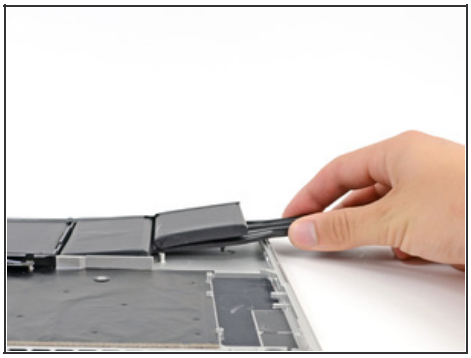
## Step 39

- Slide the plastic putty knife under the corner of the far right battery cell. This will take a lot of strength and pushing.
- Once the putty knife has loosened some of the adhesive, rotate it so that it is parallel to the length of the battery cell.

## Step 40

- Slowly, but firmly, slide the plastic putty knife along the length of the battery cell.
- This will require a **lot** of strength. You may have to take breaks between attempts, as the glue is extremely strong.
- Keep pushing until you reach the end of the battery cell. A little bit of prying may help loosen the adhesive, but do not pry more than a centimeter or so vertically, or you may puncture the battery.

## Step 41

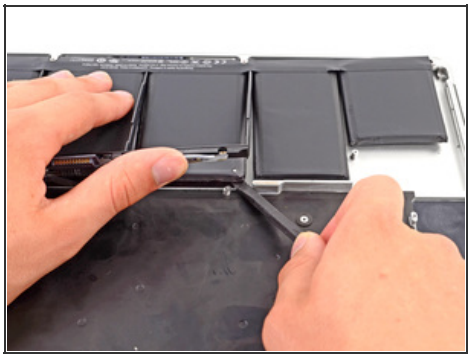
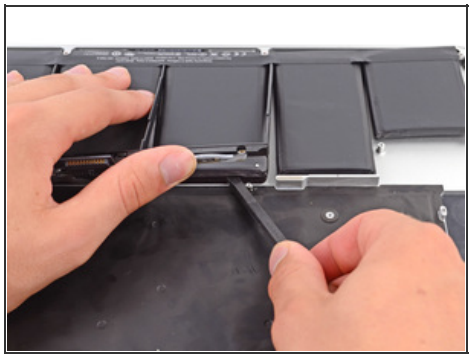


- To free the second battery cell, you are going to need to pry it up from the long edge, since there is an aluminum ridge preventing access to the short edge.
- Slide the plastic putty knife under the first battery cell at a 45 degree angle to the batteries until it has started to clear some of the adhesive under the top of the second cell.
- Once you have the knife partway under the second cell, rotate it back so that it is perpendicular to the adhesive.

## Step 42

- Because the aluminum ridge blocks access to the battery along the top edge, use a spudger to release the adhesive near the top of the second cell.
- Try to pry the battery cell up as evenly as possible. You may need to switch between the putty knife and the spudger.

## Step 43

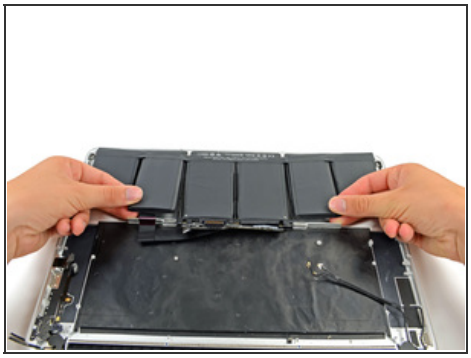
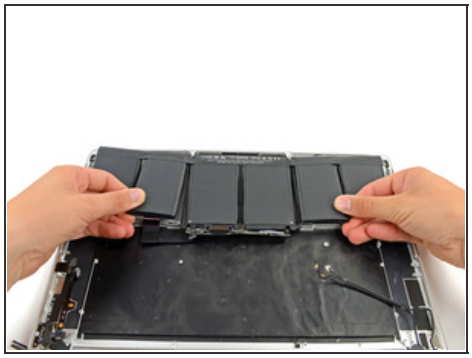
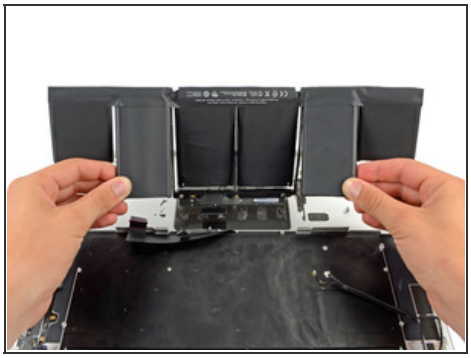
- With your left hand, lift up the battery frame so you can access the third battery cell.
- While holding the battery frame up, slide a spudger under the right corner of the third cell.
  - Slide the spudger about a centimeter in under the cell.
- Once you have freed some of the adhesive from the right corner, move the spudger over towards the center of the cell and repeat the above process.
- Keep repeating this along the width of the cell until you have loosened about a centimeter of adhesive from the full front of the cell, allowing for enough room to slide a plastic putty knife under the cell (next step.)

## Step 44

- Slide the plastic putty knife under the battery frame and the third cell. Push the putty knife in until you have released all of the adhesive holding the third cell in place.
  - Keep the putty knife as level as possible to avoid puncturing the cell.

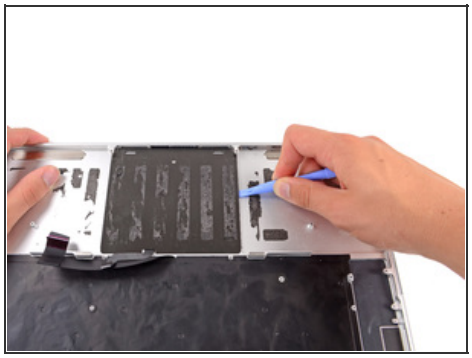
- Repeat steps 38-43 for the other three battery cells.
  - When removing the third battery cell from the left side, make sure that you slide the putty knife *over* the trackpad cable. If you pry under the cable, you risk damaging the cable.

## Step 45

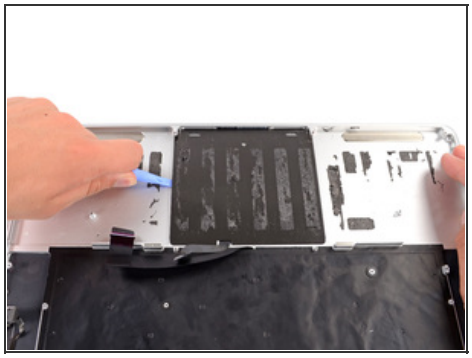
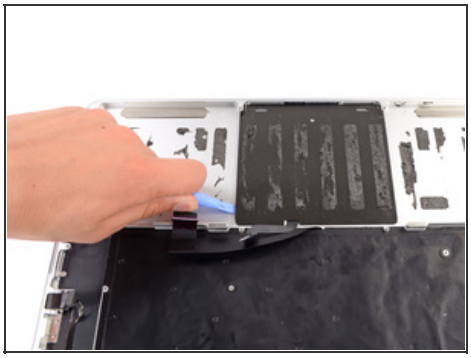
- Once all the adhesive has been released from underneath the battery cells, gently pull the battery towards you to release it from the attached pins.
- Lift the battery away from the bottom of the MacBook Pro.
- Minding any cells that may still be stuck down, remove the battery from the upper case and set it aside.
- If you have punctured the battery or torn any of the cells, we recommend storing the battery in a plastic grocery bag or something similar.

## Step 46 — Trackpad



- Wedge a plastic opening tool under the top right corner of the trackpad cover.
- Slide the tool down the edge of the cover, loosening all of the adhesive on the edge.

## Step 47

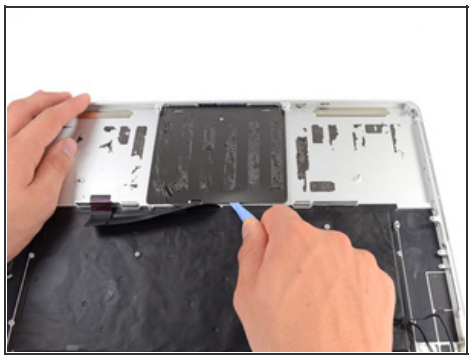



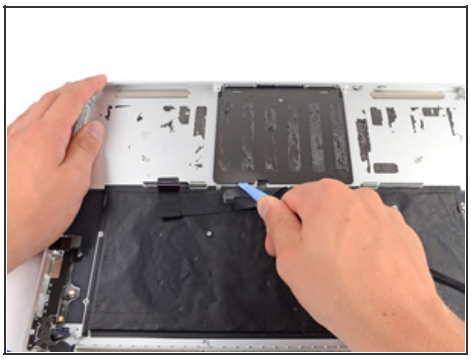
- Repeat the previous step on the other edge until both sides of the trackpad cover have been freed from adhesive.

## Step 48

- Insert the plastic opening tool into each of the openings at the top of the cover, and pry it up to begin loosening the rest of the adhesive.
- Do not pry too hard on these openings. This step should only begin loosening the rest of the adhesive. Do not try to completely pry the cover off yet.

## Step 49



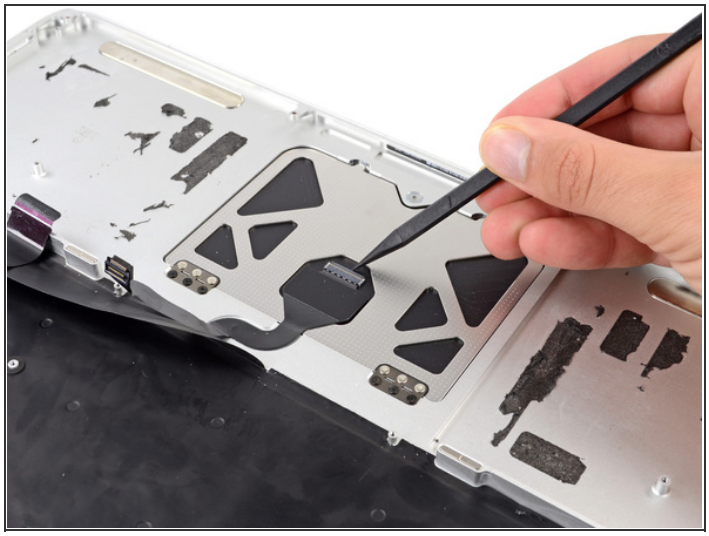


- Wedge the plastic opening tool under the bottom right corner of the cover.
- Slide the tool along the bottom of the cover, gently prying up as you go.
- Be careful not to damage the trackpad ribbon cable as you pry. Avoid prying on the cable itself.

## Step 50

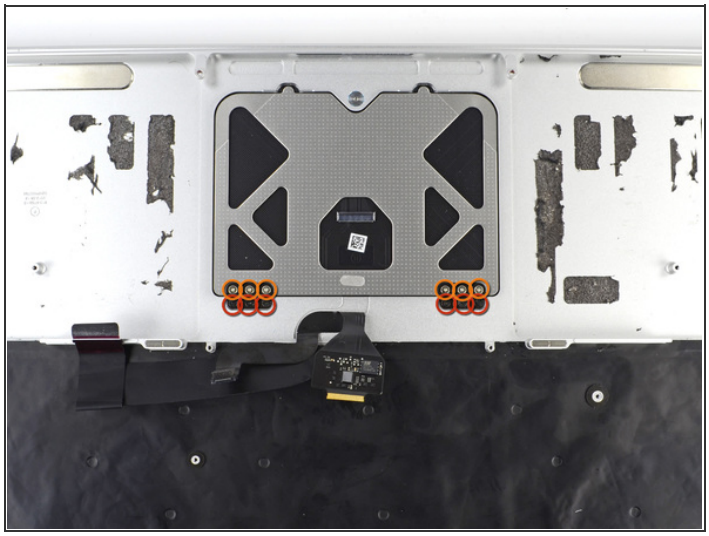
- At this point the cover should be mostly free from the adhesive. If it is still strongly adhered, repeat the previous four steps to loosen the cover.
- With one hand, lift the bottom edge of the trackpad cover up about two centimeters.
- While holding the cover up, use a spudger to clear any remaining adhesive.
- Grip the trackpad cover and pull it up and out of the device.

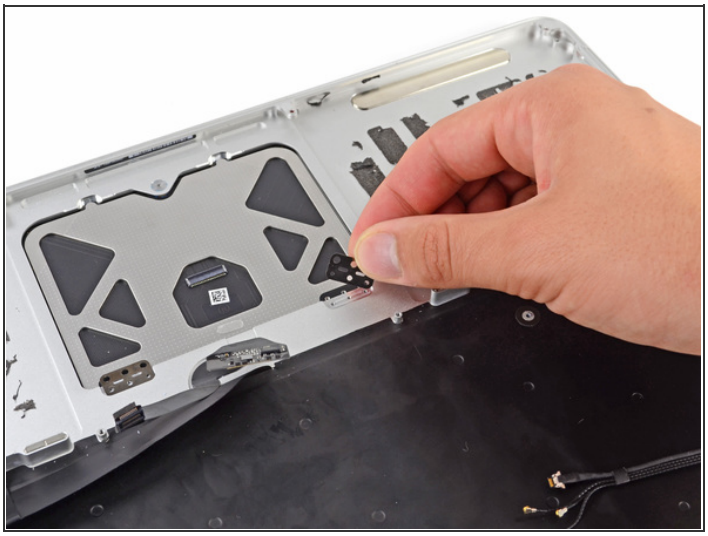
## Step 51



- Use the tip of a spudger to flip up the retaining flap on the trackpad ribbon cable ZIF socket.
- Be sure you are prying up on the hinged retaining flap, **not** the socket itself.
- Use the flat end of a spudger to pull the trackpad ribbon cable out of its socket.

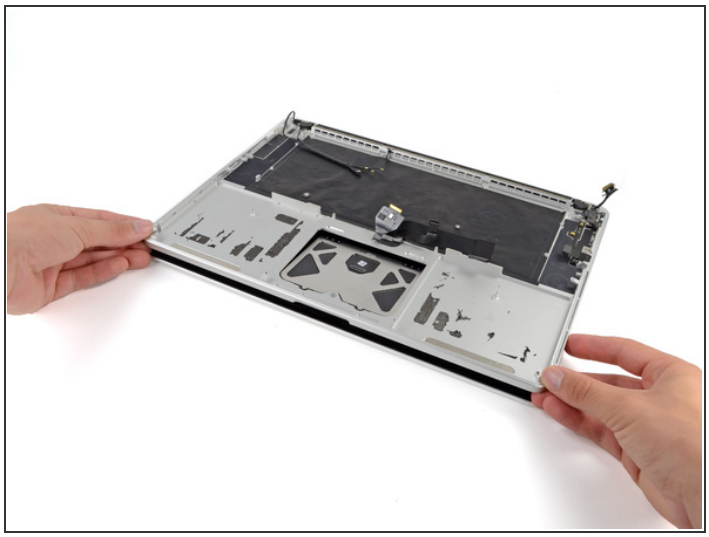
## Step 52





- Remove the following 12 screws securing the trackpad to the upper case:
  - Six 1.6 mm black Phillips #00 screws
  - Six 1.3 mm silver Phillips #00 screws
- Lift and remove the two trackpad brackets out of the upper case assembly.

## Step 53



- Slowly open the laptop about 10-15 degrees, allowing the trackpad to fall out of the upper case.
- Remove the trackpad.

To reassemble your device, follow these instructions in reverse order.

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